

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 09/476,485B  
Source: IFW/6  
Date Processed by STIC: 3/21/05

# ***ENTERED***



IFW16

## RAW SEQUENCE LISTING

DATE: 03/21/2005

PATENT APPLICATION: US/09/476,485B

TIME: 14:12:04

Input Set : A:\10823619.app

Output Set: N:\CRF4\03212005\I476485B.raw

4 <110> APPLICANT: COLUCCI, M. GABRIELLA  
 5 CHRISPEELS, MAARTEN J.  
 6 MOORE, JEFFREY G.  
 8 <120> TITLE OF INVENTION: PROGENITOR CELL PRESERVATION FACTORS AND METHODS FOR  
 9 AND PRODUCTS OF THEIR USE  
 11 <130> FILE REFERENCE: PHY-003US1/108236.119US1  
 13 <140> CURRENT APPLICATION NUMBER: 09/476,485B  
 14 <141> CURRENT FILING DATE: 1999-12-30  
 16 <150> PRIOR APPLICATION NUMBER: 08/881,189  
 17 <151> PRIOR FILING DATE: 1997-06-24  
 19 <160> NUMBER OF SEQ ID NOS: 61  
 21 <170> SOFTWARE: PatentIn version 3.0  
 23 <210> SEQ ID NO: 1  
 24 <211> LENGTH: 939  
 25 <212> TYPE: DNA  
 26 <213> ORGANISM: Artificial Sequence  
 28 <220> FEATURE:  
 29 <223> OTHER INFORMATION: D1-FRIL.  
 32 <400> SEQUENCE: 1  
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 35 caaggtcatg ccacttctac aaacaatgtc ttacaagtca ccaagttaga cagtgcagga 120  
 37 aacctgtga gttctagtgc gggagagatg ttatatctcg caccattgag cctttgggaa 180  
 39 gactctgcgg tattgacaag ctttgacacc attatcaact ttgaaatctc aacaccttac 240  
 41 acttctcgta tagctgatgg cttggccttc ttcatcgac cacctgactc tgtcatcagt 300  
 43 tatcatgggtg gttttcttgg actctttccc aacgcaaaca ctctcaaca ctctccacc 360  
 45 tctgaaaacc aaaccaccac taaggctgca tcaagcaacg ttgttgctgt tgaatttgac 420  
 47 acctatctta atcccgatta tggatgacca aactacatac acatcggaat tgacgtcaac 480  
 49 tctattagat ccaaggtaac tgctaagtgg gactggcaaa atgggaaaat agccactgca 540  
 51 cacattagct ataactctgt ctctaaaaga ctatctgtta ctagttatta tgctgggagt 600  
 53 aaacctgcga ctctctccta tgatattgag ttacatacag tgcttcctga atgggtcaga 660  
 55 gtaggggttat ctgcttcaac tggacaagat aaagaaagaa ataccgttca ctcatgggtct 720  
 57 ttcacttcaa gcttgtggac caatgtggcg aagaaggaga atgaaaacaa gtatattaca 780  
 59 agaggcggttc tgtgatgata tatgtgtatc aatgattttc tatgttataa gcatgtaatg 840  
 61 tgcgatgagt caataatcac aagtacagtg tagtacttgt atgttgtttg tgtaagagtc 900  
 63 agtttgcttt taataataac aagtgcagtt agtacttgt 939  
 67 <210> SEQ ID NO: 2  
 68 <211> LENGTH: 264  
 69 <212> TYPE: PRT  
 70 <213> ORGANISM: Artificial Sequence  
 72 <220> FEATURE:  
 73 <223> OTHER INFORMATION: D1-FRIL.  
 76 <400> SEQUENCE: 2  
 77 Ala Gln Ser Leu Ser Phe Ser Phe Thr Lys Phe Asp Pro Asn Gln Glu

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78 1           5           10           15
80 Asp Leu Ile Phe Gln Gly His Ala Thr Ser Thr Asn Asn Val Leu Gln
81           20           25           30
83 Val Thr Lys Leu Asp Ser Ala Gly Asn Pro Val Ser Ser Ser Ala Gly
84           35           40           45
86 Arg Val Leu Tyr Ser Ala Pro Leu Arg Leu Trp Glu Asp Ser Ala Val
87           50           55           60
89 Leu Thr Ser Phe Asp Thr Ile Ile Asn Phe Glu Ile Ser Thr Pro Tyr
90 65           70           75           80
92 Thr Ser Arg Ile Ala Asp Gly Leu Ala Phe Phe Ile Ala Pro Pro Asp
93           85           90           95
95 Ser Val Ile Ser Tyr His Gly Gly Phe Leu Gly Leu Phe Pro Asn Ala
96           100          105          110
98 Asn Thr Leu Asn Asn Ser Ser Thr Ser Glu Asn Gln Thr Thr Thr Lys
99           115          120          125
101 Ala Ala Ser Ser Asn Val Val Ala Val Glu Phe Asp Thr Tyr Leu Asn
102          130          135          140
104 Pro Asp Tyr Gly Asp Pro Asn Tyr Ile His Ile Gly Ile Asp Val Asn
105 145          150          155          160
107 Ser Ile Arg Ser Lys Val Thr Ala Lys Trp Asp Trp Gln Asn Gly Lys
108          165          170          175
110 Ile Ala Thr Ala His Ile Ser Tyr Asn Ser Val Ser Lys Arg Leu Ser
111          180          185          190
113 Val Thr Ser Tyr Tyr Ala Gly Ser Lys Pro Ala Thr Leu Ser Tyr Asp
114          195          200          205
116 Ile Glu Leu His Thr Val Leu Pro Glu Trp Val Arg Val Gly Leu Ser
117          210          215          220
119 Ala Ser Thr Gly Gln Asp Lys Glu Arg Asn Thr Val His Ser Trp Ser
120 225          230          235          240
122 Phe Thr Ser Ser Leu Trp Thr Asn Val Ala Lys Lys Glu Asn Glu Asn
123          245          250          255
125 Lys Tyr Ile Thr Arg Gly Val Leu
126          260
129 <210> SEQ ID NO: 3
130 <211> LENGTH: 1005
131 <212> TYPE: DNA
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: Nucleic acid sequence of the naturally-occurring
136 D1-FRIL protein.
139 <400> SEQUENCE: 3
140 atggcttcct ccaacttact caccctagcc ctcttccttg tgcttctcac ccacgcaaac      60
142 tcagccgcac agtcattgtc atttagtttc accaagtttg atcctaacca agaggatctt      120
144 atcttccaag gtcattgcac ttctacaaac aatgtcttac aagtcaccaa gttagacagt      180
146 gcaggaaacc ctgtgagttc tagtgcgggg agagtgttat attctgcacc attg'gcctt      240
148 tgggaagact ctgcggtatt gacaagcttt gacaccatta tcaactttga aatctcaaca      300
150 ccttacactt ctggtatagc tgatggcttg gccttcttca ttgcaccacc tgactctgtc      360
152 atcagttatc atggtggttt tcttggaactc tttcccaacg caaacactct caacaactct      420
154 tccacctctg aaaaccaaac caccactaag gctgcatcaa gcaacgttgt tgctgttgaa      480

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156 tttgacacct atcttaatcc cgattatggt gatccaaact acatacacat cggaattgac      540
158 gtcaactcta ttagatccaa ggtaactgct aagtgggact ggcaaatgg gaaaatagcc      600
160 actgcacaca ttagctataa ctctgtctct aaaagactat ctgttactag ttattatgct      660
162 gggagtaaac ctgcgactct ctccatgat attgagttac atacagtgct tcctgaatgg      720
164 gtcagagtag ggttatctgc ttcaactgga caagataaag aaagaaatac cgttcactca      780
166 tggctctttca cttcaagctt gtggaccaat gtggcggaaga aggagaatga aaacaagtat      840
168 attacaagag gcgttctgtg atgatatatg tgtatcaatg attttctatg ttataagcat      900
170 gtaatgtgcg atgagtcaat aatcacaagt acagtgtagt acttgtatgt tgtttgtgta      960
172 agagtcagtt tgcttttaat aataacaagt gcagttagta cttgt                      1005
175 <210> SEQ ID NO: 4
176 <211> LENGTH: 22
177 <212> TYPE: PRT
178 <213> ORGANISM: Artificial Sequence
180 <220> FEATURE:
181 <223> OTHER INFORMATION: Signal sequence from the FRIL family isolated from
182     Dolichos lab lab
185 <400> SEQUENCE: 4
186 Met Ala Ser Ser Asn Leu Leu Thr Leu Ala Leu Phe Leu Val Leu Leu
187 1           5           10           15
189 Thr His Ala Asn Ser Ala
190           20
193 <210> SEQ ID NO: 5
194 <211> LENGTH: 914
195 <212> TYPE: DNA
196 <213> ORGANISM: Artificial Sequence
198 <220> FEATURE:
199 <223> OTHER INFORMATION: Pv-FRIL.
202 <400> SEQUENCE: 5
203 gctcagtcac tatcttttaa ctttaccaag tttgatcttg accaaaaaga tcttatcttc      60
205 caagggtgatg ccacttctac aaacaatgtc ttacaactca ctaagttaga cagtggagga      120
207 aaccctgtgg gtgctagtgt gggaagagtg ttattctctg caccatttca tctttgggaa      180
209 aactctatgg cagtgtcaag ctttgaaact aatctcacca ttcaaatctc aacacctcac      240
211 ccttattatg cagctgatgg ctttgccttc ttcttgcac cacatgacac tgtcatccct      300
213 ccaaattctt ggggcaaatt ccttggactc tactcaaacg ttttcagaaa ctccccacc      360
215 tctgaaaacc aaagcttttg tgatgtcaat actgactcaa gagttgttgc tgtcgaattt      420
217 gacaccttcc ctaatgccaa tattgatcca aattacagac acattggaat cgatgtgaac      480
219 tctattaagt ccaaggaaac tgctaggttg gagtggcaaa atgggaaaac ggccactgca      540
221 cgcatcagct ataactctgc ctctaaaaaa tcaactgtta ctacgtttta tcctgggatg      600
223 gaagttgtgg ctctctccca tgatgttgac ttacatgcag agcttcctga atgggttaga      660
225 gtagggttat ctgcttcaac tggagaggag aaacaaaaaa ataccattat ctcatggtct      720
227 ttcacttcaa gcttgaagaa caacgaggtg aaggagccga aagaagacat gtatattgca      780
229 aacgttgtgc gatcatatac atggatcaat gacgttctat cttatataag caataaataa      840
231 atgtatgatg cactcaataa taatcacaag tacgtacggt gtagtacttg tatgttgttt      900
233 atgaaaaaaaa aaaa                      914
237 <210> SEQ ID NO: 6
238 <211> LENGTH: 279
239 <212> TYPE: PRT
240 <213> ORGANISM: Artificial Sequence
242 <220> FEATURE:

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TIME: 14:12:04

Input Set : A:\10823619.app

Output Set: N:\CRF4\03212005\I476485B.raw

243 &lt;223&gt; OTHER INFORMATION: Pv-FRIL.

246 &lt;400&gt; SEQUENCE: 6

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247 Ala Gln Ser Leu Ser Phe Asn Phe Thr Lys Phe Asp Leu Asp Gln Lys
248 1          5          10          15
250 Asp Leu Ile Phe Gln Gly Asp Ala Thr Ser Thr Asn Asn Val Leu Gln
251          20          25          30
253 Leu Thr Lys Leu Asp Ser Gly Gly Asn Pro Val Gly Ala Ser Val Gly
254          35          40          45
256 Arg Val Leu Phe Ser Ala Pro Phe His Leu Trp Glu Asn Ser Met Ala
257          50          55          60
259 Val Ser Ser Phe Glu Thr Asn Leu Thr Ile Gln Ile Ser Thr Pro His
260 65          70          75          80
262 Pro Tyr Tyr Ala Ala Asp Gly Phe Ala Phe Phe Leu Ala Pro His Asp
263          85          90          95
265 Thr Val Ile Pro Pro Asn Ser Trp Gly Lys Phe Leu Gly Leu Tyr Ser
266          100         105         110
268 Asn Val Phe Arg Asn Ser Pro Thr Ser Glu Asn Gln Ser Phe Gly Asp
269          115         120         125
271 Val Asn Thr Asp Ser Arg Val Val Ala Val Glu Phe Asp Thr Phe Pro
272          130         135         140
274 Asn Ala Asn Ile Asp Pro Asn Tyr Arg His Ile Gly Ile Asp Val Asn
275 145         150         155         160
277 Ser Ile Lys Ser Lys Glu Thr Ala Arg Trp Glu Trp Gln Asn Gly Lys
278          165         170         175
280 Thr Ala Thr Ala Arg Ile Ser Tyr Asn Ser Ala Ser Lys Lys Ser Thr
281          180         185         190
283 Val Thr Thr Phe Tyr Pro Gly Met Glu Val Val Ala Leu Ser His Asp
284          195         200         205
286 Val Asp Leu His Ala Glu Leu Pro Glu Trp Val Arg Val Gly Leu Ser
287          210         215         220
289 Ala Ser Thr Gly Glu Glu Lys Gln Lys Asn Thr Ile Ile Ser Trp Ser
290 225         230         235         240
292 Phe Thr Ser Ser Leu Lys Asn Asn Glu Val Lys Glu Pro Lys Glu Asp
293          245         250         255
295 Met Tyr Ile Ala Asn Val Val Arg Ser Tyr Thr Trp Ile Asn Asp Val
296          260         265         270
298 Leu Ser Tyr Ile Ser Asn Lys
299          275

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302 &lt;210&gt; SEQ ID NO: 7

303 &lt;211&gt; LENGTH: 678

304 &lt;212&gt; TYPE: DNA

305 &lt;213&gt; ORGANISM: Artificial Sequence

307 &lt;220&gt; FEATURE:

308 &lt;223&gt; OTHER INFORMATION: YamFril partial mRNA sequence.

311 &lt;400&gt; SEQUENCE: 7

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312 acgaagtctg acagcgacca aaaggatctt atgttccaag gtcataccat ttctagcagc      60
314 aatgtcatat aactcaccaa gttagacagt aatggaaacc ctgtgagtac cagtgtggga      120
316 agagtgttat actctgcacc attgcgcctt tgggaaagct ctacagtagt gtcaaccttt      180
318 gagaccactt tcacctttca aatctcaaca ccttacacta gtcctcctgg tgatgggctc      240

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## RAW SEQUENCE LISTING

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Input Set : A:\10823619.app

Output Set: N:\CRF4\03212005\I476485B.raw

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320 gccttcttcc ttgcaccata tgacactgtc atccctccaa attctgctgg caatcttctt 300
322 ggactctttc ctaacttaaa tgctttaaga aactccacca ccagtaaaga aaccactatt 360
324 gatgtcaatg ctgcatctaa caacgttggt gccgttgaat ttgacaccta ccctaacgac 420
326 aatattggtg atccaagata caaacacatt ggaatcgatg tcaactctat caggtccaag 480
328 gcaactgttg cgtgggactg gcaaaatggg aaaacagcca ctgcacacat cagctataac 540
330 tctgcctcta aaagactatc tgttactact ttttatcctg ggggtaaagc tgtgagtctt 600
332 tcccatgacg ttgagctcac tcaagtgcct cctcaatgga ttagagtagg gttctctgct 660
334 tcaacaggat tagagaaa 678
338 <210> SEQ ID NO: 8
339 <211> LENGTH: 234
340 <212> TYPE: PRT
341 <213> ORGANISM: Artificial Sequence
343 <220> FEATURE:
344 <223> OTHER INFORMATION: YamFril deduced amino acid squence.
347 <400> SEQUENCE: 8
348 Ala Gln Ser Val Ser Phe Thr Phe Thr Lys Phe Asp Ser Asp Gln Lys
349 1 5 10 15
351 Asp Leu Met Phe Gln Gly His Thr Ile Ser Ser Ser Asn Val Ile Gln
352 20 25 30
354 Leu Thr Lys Leu Asp Ser Asn Gly Asn Pro Val Ser Thr Ser Val Gly
355 35 40 45
357 Arg Val Leu Tyr Ser Ala Pro Leu Arg Leu Trp Glu Ser Ser Thr Val
358 50 55 60
360 Val Ser Thr Phe Glu Thr Thr Phe Thr Phe Gln Ile Ser Thr Pro Tyr
361 65 70 75 80
363 Thr Ser Pro Pro Gly Asp Gly Leu Ala Phe Phe Leu Ala Pro Tyr Asp
364 85 90 95
366 Thr Val Ile Pro Pro Asn Ser Ala Gly Asn Leu Leu Gly Leu Phe Pro
367 100 105 110
369 Asn Leu Asn Ala Leu Arg Asn Ser Thr Thr Ser Lys Glu Thr Thr Ile
370 115 120 125
372 Asp Val Asn Ala Ala Ser Asn Asn Val Val Ala Val Glu Phe Asp Thr
373 130 135 140
375 Tyr Pro Asn Asp Asn Ile Gly Asp Pro Arg Tyr Lys His Ile Gly Ile
376 145 150 155 160
378 Asp Val Asn Ser Ile Arg Ser Lys Ala Thr Val Ala Trp Asp Trp Gln
379 165 170 175
381 Asn Gly Lys Thr Ala Thr Ala His Ile Ser Tyr Asn Ser Ala Ser Lys
382 180 185 190
384 Arg Leu Ser Val Thr Thr Phe Tyr Pro Gly Gly Lys Ala Val Ser Leu
385 195 200 205
387 Ser His Asp Val Glu Leu Thr Gln Val Leu Pro Gln Trp Ile Arg Val
388 210 215 220
390 Gly Phe Ser Ala Ser Thr Gly Leu Glu Lys
391 225 230
394 <210> SEQ ID NO: 9
395 <211> LENGTH: 15
396 <212> TYPE: PRT
397 <213> ORGANISM: Artificial Sequence

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/476,485B

DATE: 03/21/2005  
TIME: 14:12:05

Input Set : A:\10823619.app  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:10; Xaa Pos. 14  
Seq#:11; N Pos. 3,6,9,12,15,18,21  
Seq#:12; N Pos. 3,6,9,15  
Seq#:16; N Pos. 3,6,9,12,15  
Seq#:24; Xaa Pos. 7  
Seq#:31; Xaa Pos. 7  
Seq#:32; Xaa Pos. 7  
Seq#:33; Xaa Pos. 12  
Seq#:34; Xaa Pos. 7  
Seq#:36; N Pos. 18  
Seq#:58; Xaa Pos. 7  
Seq#:59; Xaa Pos. 7

**VERIFICATION SUMMARY**

DATE: 03/21/2005

PATENT APPLICATION: **US/09/476,485B**

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Input Set : **A:\10823619.app**Output Set: **N:\CRF4\03212005\I476485B.raw**

L:425 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
L:473 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0  
L:506 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0  
L:588 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0  
L:790 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0  
L:892 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0  
L:911 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0  
L:930 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:0  
L:949 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0  
L:982 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0  
L:1520 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0  
L:1541 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0